

ABSTRACT OF THE DISCLOSURE

An immersion lithography process is described as follows. A photoresist layer and a protective layer are sequentially formed on a material layer, and then an immersion exposure step is performed to define an exposed portion and an unexposed portion in the photoresist layer. A solubilization step is conducted to solubilize the
5 protective layer on the exposed portion of the photoresist layer, and then a development step is conducted to remove the exposed portion of the photoresist layer and the protective layer thereon. Since the photoresist layer is covered with the protective layer, the chemicals in the photoresist layer do not diffuse into the immersion liquid to cause contamination. The protective layer can be patterned simultaneously in the
10 development step, and no extra step is required to remove the protective layer. Therefore, the whole lithography process is not complicated.